

Tool 2(content).2. Scientifically Based Research Activity, (p 1 of 6)
with Sample of a Completed Documentation Form and a Discussion Guide

Scientifically Based Research Activity

This activity will help participants become familiar with what is included in the reviews of research studies provided on the Iowa Content Network.

Iowa's Content Network teams used documentation forms to record their review of research studies in reading, math, and science. All reviews are on the Content Network website. Because the teams provided extensive detail regarding each study, their reviews will provide enough information in most cases to determine if the content is relevant to your goals and student needs. To see a brief summary and the reviews, go to the Content Network website: <http://www.state.ia.us/educate/ecese/tqt/tc/prodev/main.html>

As you study the example of a completed review form, you will notice that the Content Network reviewers described the key elements of the study, summarized the findings, and rated the quality of the studies.

Activity Process – Documenting Scientifically Based Research

1. Read the Documentation Form for “Effects of a Cooperative Learning Approach in Reading and Writing on Academically Handicapped and Nonhandicapped Students” by Robert J. Stevens and Robert E. Slavin.
2. After reading the documentation form, complete the Discussion Guide.

The following pages:

- ☐ Sample of a completed Documentation Form
- ☐ Discussion Guide
- ☐ Blank Documentation Form

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Sample Completed Form

Documentation of Structured Analysis for Selecting Scientifically Based Research:
Instructional Strategies and Programs

Reviewer(s) Deb Hansen and Bev Showers **Date Reviewed** May 15, 2003

Title of Study/Meta-analysis: Effects of a Cooperative Learning Approach in Reading and Writing on Academically Handicapped and Nonhandicapped Students

Author(s): Stevens, Robert J. and Slavin, Robert E

Source, Publication Date & Pages: Elementary School Journal , Vol.95, #3, 1995

Is this source (journal or book) refereed? Yes √ No

1. What is the name or title of the instructional strategy/model, program, material, or intervention?
What was the research question? What was the intended outcome of goal?

Name/Title: Cooperative Integrated Reading Awareness and Composition Program (CIRC)

Research Question:

- To investigate the effects of CIRC on student metacognitive control
- To study long term flexible use of comprehension strategies,
- To extend the study beyond 3rd and 4th grade,
- To investigate academic and social outcomes as an approach to supporting students with disabilities in an inclusive environment

Description of subjects: (Include # of participants, age, SES, etc.)

- 2nd through 6th grade, 1,299 students in Maryland, working class population
- 0 to 10% minority
- 6–13 % low SES
- 11% LD in experimental group (control group 10% LD)
- 12% of school total school population is LD

2. Describe the strategy/model, program, material, or intervention.

A comprehensive reading program including

- Cooperative learning in elementary reading and language arts (in heterogeneous groups and including cognitive apprenticeship)
- Explicit instruction on comprehension strategies, using writing process to teach reading and language arts including: story related activities, direct instruction in comprehension, and integrated writing and language arts.

3. Describe the design of the study (sample selection, assignment to treatment, controls, length of intervention, etc.)

- 31 classrooms experimental, 32 classrooms nonexperimental
- Matched for SES, ethnicity, achievement
- Nonequivalent control group – Design #10
- All teachers were volunteers. Experimental classrooms integrated academically handicapped students and used CIRC as the instructional treatment. Control classrooms used district's basal series with two to three reading groups and academically handicapped students were pulled out for instruction by special education teachers.

4. What instruments were used to collect data and what metric(s) (effect size, tests of significance, etc.) were used to report results? (Include all measures of dependent variable as well as implementation, attitudes, etc.)

- California Achievement Test (CAT) Form C/E
- Informal Metacognition Index of Reading Awareness
- Attitude inventory on attitudes toward reading and writing

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5. Briefly describe and summarize the results of the study.

Positive results for experimental classes.

Year 1:

- Post test (total population) = effect size +.22 for vocabulary, +.24 for reading comprehension
- Post test for special education = effect size +.4 for reading, +.31 for reading comprehension

Year 2:

- Post test (total population) = effect size +.20 for vocabulary, +.26 for reading comprehension, +.26 for language expression
- Post test for special education = effect size +.37 for reading, +.32 for reading comprehension.
- Significant effect for experimental group on metacognition test ($p < .01$)
- No significant difference between treatment and control groups on attitudes toward reading and writing.

6. Did the study include an evaluation of how the intervention was implemented? Did implementation data address both the frequency of use as well as the integrity of the implementation?

No: _____ Yes: ✓ If yes, briefly describe.

Teachers were observed periodically (frequently in first six weeks, less frequently during remainder of year.)

7. Were gains in student achievement reported?

No: _____ Yes: ✓ If yes, briefly describe.

See results above

If student achievement gains were reported, were they sustained over time?

Yes--gains were reported over a 2-year period.

8. Replication: Did the study cite previous tests of this treatment? Is this study a replication of an earlier study?

No: _____ Yes: ✓ If yes, briefly describe.

- 2 previous studies
- CIRC increased student achievement in reading and language arts in 3rd and 4th grade over 12-24 weeks

Summary: Rating 4 Design (scale: 1-5)

This is a 2-year study to determine long-term effects of cooperative learning approach to elementary reading and language arts instruction. The Cooperative Integrated Reading and Composition (CIRC) program was provided to 2nd – 6th grade students. Students with disabilities were included in the regular classroom and in the cooperative learning team activities. Heterogeneous learning teams worked on reading and writing activities related to stories they were reading, including explicit instruction on comprehension strategies, a writing approach to teach reading and language arts. First-year results indicated CIRC students had significantly higher achievement in reading vocabulary and reading comprehension. Second-year results indicated that CIRC students had significantly higher achievement in vocabulary, comprehension, and language expression. Results suggested that CIRC students had greater metacognitive awareness than their peers. Students with disabilities in CIRC classes demonstrated significantly higher achievement in reading vocabulary, reading comprehension, and language expression than did comparable special education students receiving instruction in traditional settings.

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**Discussion Guide for
Reviewing a Completed Documentation Form**

After studying the documentation form that provides a review of a scientifically based research article, address the questions below. Share your responses with a partner.

1. What did you notice about the research strategy you reviewed?

2. What did you notice about how the review of this study was organized?

3. What type of information did you find in this review that would be critical in helping you to consider an instructional strategy for professional development?

4. Did reading the documentation form about this study raise additional questions? If yes, what might you do to get answers to your questions.

5. Finding a review of a highly rated study of a strategy that aligns with your professional development target will not give you enough information to select content. Why not? What else will you need to know?

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**Blank Form for
Documentation of Scientifically Based Research**

Reviewer(s) _____	Date Reviewed _____
Title of Study/Meta-analysis _____	
Author(s): _____	
Source, Publication Date & Pages: _____	
Is this source (journal or book) refereed? Yes_____ No _____	
1. What is the name or title of the instructional strategy/model, program, material, or intervention? What was the research question? What was the intended outcome of goal? Name/Title: Research Question: Description of subjects: (Include # of participants, age, SES, etc.)	
2. Describe the strategy/model, program, material, or intervention.	
3. Describe the design of the study (sample selection, assignment to treatment, controls, length of intervention, etc.)	
4. What instruments were used to collect data and what metric(s) (effect size, tests of significance, etc.) were used to report results? (Include all measures of dependent variable as well as implementation, attitudes, etc.)	

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5. Briefly describe and summarize the results of the study.

6. Did the study include an evaluation of how the intervention was implemented? Did implementation data address both the frequency of use as well as the integrity of the implementation?

No: _____ Yes: _____ If yes, briefly describe.

Were gains in student achievement reported?

No: _____ Yes: _____ If yes, briefly describe.

If student achievement gains were reported, were they sustained over time?

8. Replication: Did the study cite previous tests of this treatment? Is this study a replication of an earlier study?

No: _____ Yes: _____ If yes, briefly describe.

Summary: Rating _____ Design (scale: 1-5)

If the article or report doesn't provide the information needed to answer the questions above you should call or email the author. It is not uncommon for publishers to drastically cut essential information out of articles before publishing them.

If you do contact the author or other research staff of this study, include the following information:

Name of contact: _____

Phone number: _____

Agency: _____

Summary of conversation: _____